DEPARTMENT OF HEALTH AND HUMAN SERVICES

NATIONAL INSTITUTES OF HEALTH

Buildings and Facilities

National Institutes of Health

BUILDINGS AND FACILITIES

For the study of, construction of, demolition of, renovation of, and acquisition of equipment for, facilities of or used by NIH, including the acquisition of real property, [$200,000,000]*$300,000,000*, to remain available through September 30, [2024]*2025*.

NATIONAL INSTITUTES OF HEALTH
Buildings & Facilities

Amounts Available for Obligation
(Dollars in Thousands)

Source of Funding	FY 2019 Final	FY 2020 Enacted	FY 2021 President's Budget
Appropriation	$200,000	$200,000	$300,000
Rescission	0	0	0
Sequestration	0	0	0
Secretary's Transfer	-687	0	0
Supplemental	0	0	0
Subtotal, adjusted appropriation	$199,313	$200,000	$300,000
Recovery of prior year obligations	1,575	0	0
Unobligated balance, start of year	27,927	17,661	0
Subtotal, adjusted budget authority	$228,814	$217,661	$300,000
Unobligated balance, end of year	-17,661	0	0
Unobligated balance lapsing	-46	0	0
Total obligations	$211,107	$217,661	$300,000

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Buildings & Facilities

Summary of Changes

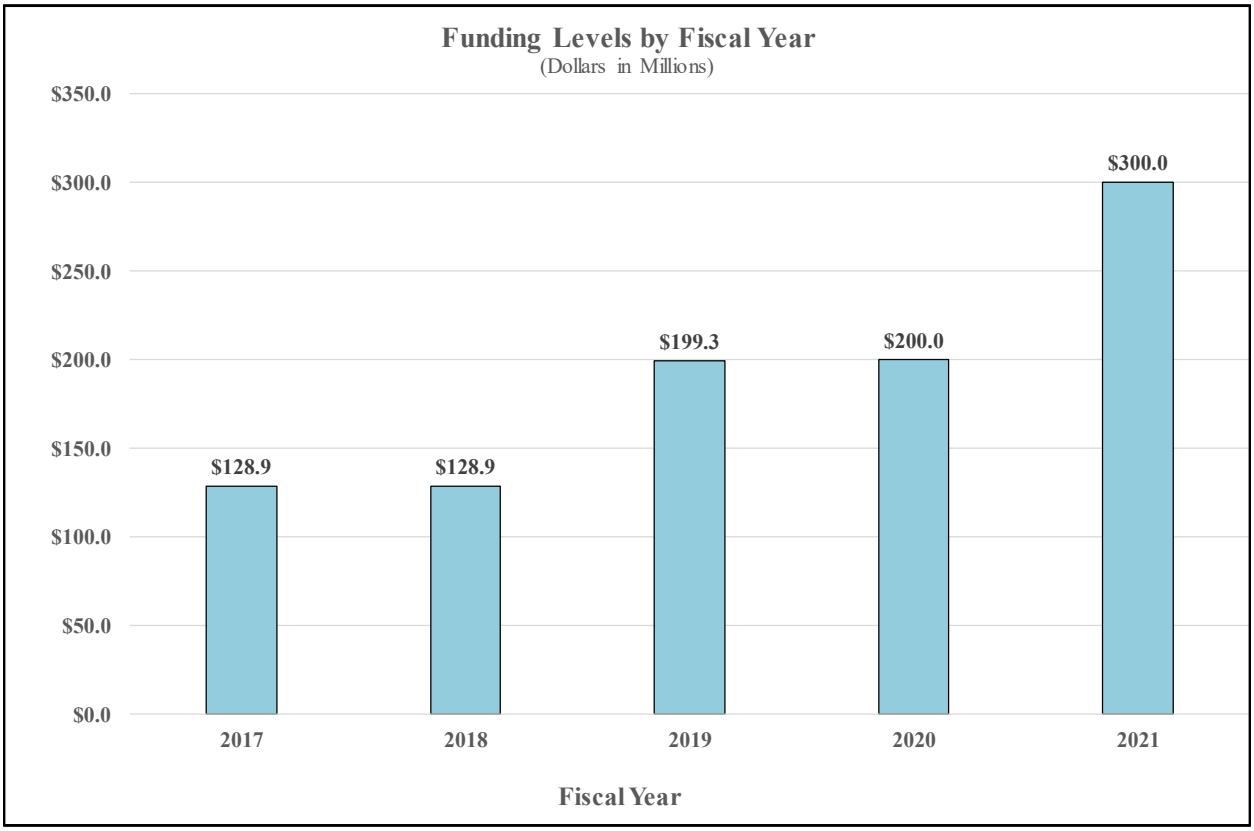
(Dollars in Thousands)

FY 2020 Enacted	$200,000
FY 2021 President's Budget	$300,000
Net change	$100,000

	FY 2020	**FY 2021**	**FY 2020 +/- FY 2021**
Increases			
A. Program:			
Surgery, Radiology and Lab Medicine Building (SRLM)	62,600	229,000	166,400
Total Increases	$ 62,600	$ 229,000	$ 166,400

	FY 2020	**FY 2021**	**FY 2020 +/- FY 2021**
Decreases			
A. Program:			
Electrical Switching Station & Emergency Generators 59/59A	3,908		(3,908)
RTP Site Utility Loop	5,500		(5,500)
Replace R22 Refrigerant Chillers	20,000		(20,000)
Electrical Substation 17	14,680	-	(14,680)
Replacement of Direct Buried Steam Pipe Along Convent Dr	6,850	-	(6,850)
Clinical Center E Wing Renovation	30,000	15,000	(15,000)
Repairs & Improvements	56,462	56,000	(462)
Total Decreases	137,400	71,000	(66,400)
Total Changes	$ 200,000	$ 300,000	$100,000

Budget Graph



NATIONAL INSTITUTES OF HEALTH
Buildings & Facilities

Budget Authority by Activity
(Dollars in Thousands)

	FY 2019 Final		FY 2020 Enacted		FY 2021 President's Budget		FY 2021 +/- FY 2020 Enacted	
	FTE	Amount	FTE	Amount	FTE	Amount	FTE	Amount
Detail								
Permanent IVAU CRC		40,750		-		-		-
Surgery, Radiology and Lab Medicine Building (SRLM)		-		62,600		229,000		166,400
Electrical Switching Station & Emergency Generators 59/59A (Design Only)		-		3,908		-		(3,908)
RTP Site Utility Loop		-		5,500		-		(5,500)
Replace R22 Refrigerant Chillers		-		20,000		-		(20,000)
Electrical Substation 17		-		14,680		-		(14,680)
Replacement of Direct Buried Steam Pipe Along Convent Dr		-		6,850		-		(6,850)
Clinical Center E Wing Renovation		30,000		30,000		15,000		(15,000)
Repairs & Improvements		128,563		56,462		56,000		(462)
TOTAL		**199,313**		**200,000**		**300,000**		**100,000**

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Authorizing Legislation

	PHS Act/ Other Citation	U.S. Code Citation	2019 Amount Authorized	FY 2020 Enacted	2020 Amount Authorized	FY 2021 President's Budget
Research and Investigation	Section 301	42§241	Indefinite	$200,000,000	Indefinite	$300,000,000
Buildings & Facilities	Section 401(a)	42§281	Indefinite		Indefinite	
Total, Budget Authority				$200,000,000		$300,000,000

NATIONAL INSTITUTES OF HEALTH
Buildings & Facilities

Appropriations History

Fiscal Year	Budget Estimate to Congress	House Allowance	Senate Allowance	Appropriation
2011	$125,581,000		$125,420,000	$50,000,000
Rescission				$100,000
2012	$125,581,000	$125,581,000	$125,581,000	$125,581,000
Rescission				$237,348
2013	$125,308,000		$125,308,000	$125,343,652
Rescission				$250,687
Sequestration				($6,291,389)
2014	$126,111,000		$125,308,000	$128,663,000
Rescission				$0
2015	$128,663,000			$128,863,000
Rescission				$0
2016	$128,863,000	$132,640,000	$128,863,000	$128,863,000
Rescission				$0
2017	$128,863,000			$128,863,000
Rescission				$0
2018	$98,615,000	$128,863,000	$128,863,000	$128,863,000
Rescission				$0
2019	$200,000,000	$200,000,000	$200,000,000	$200,000,000
Rescission				$0
2020	$200,000,000	$200,000,000	$300,000,000	$200,000,000
Rescission				$0
2021	$300,000,000			

Justification of Budget Request

Buildings and Facilities

Authorizing Legislation: Section 301 and title IV of the Public Health Services Act, as amended.

Budget Authority:

	FY 2019 Final	FY 2020 Enacted	FY 2021 President's Budget	FY 2021 +/- FY 2020
BA	$199,313,000	$200,000,000	$300,000,000	$100,000,000
Obligations	211,107,237	217,661,135	300,000,000	82,338,865

Director's Overview

America's continuing leadership in conducting biomedical research requires infrastructure and facilities that are safe, in compliance with all laws and regulations, and conducive to cutting-edge research and research support. The National Institutes of Health (NIH) strives to balance new facilities, needed to leverage innovative research opportunities and support the study of emerging health threats, with the need to remain responsible stewards of the existing research facilities. NIH continuously evaluates its property inventory to ensure that the buildings and infrastructure on its campuses are safe and reliable and to ensure that the inventory continues to evolve to meet the needs of modern scientific research. Key NIH facilities include the Clinical Research Center (CRC), which includes 240 inpatient beds; biosafety level (BSL) 3 and 4 high containment facilities; the largest government-owned utility generation and distribution system; biomedical research laboratories; animal holding facilities; and buildings housing research support activities.

The Building and Facilities (B&F) program is an essential element of the conduct of safe, reproducible science for the Intramural Research Program. The B&F program is critical to ensuring patient safety in the NIH Clinical Center and the conduct of specialty research functions, such as infectious disease research, genomic sequencing, cellular therapy, and unique imaging capabilities. Today's biomedical research requires facilities capable of providing the proper mechanical, electrical, plumbing, fire protection, and architectural support. The requested increase in the B&F appropriation is needed to address the NIH Backlog of Maintenance and Repair (BMAR), currently nearly $2.1 billion.

As directed by Congress in the Consolidated Appropriations Act, 2017, NIH entered into a contract with the National Academies of Science, Engineering and Medicine (NASEM) to assess the condition of the facilities on the Bethesda Campus. An Ad Hoc Committee comprised of medical, architectural, engineering, planning and maintenance experts was established to conduct

the analysis. On August 26, 2019, the report was made public and is available on-line at https://www.nap.edu/read/25483/chapter/1. The report found that "The buildings and facilities at the NIH Bethesda Campus are in need of significant improvement and upgrading to sustain their current mission and ongoing functionality." The report highlights pressing campus-wide infrastructure needs and recommends improvements to NIH's capital planning and funding processes.

NIH's highest priority construction project is the Surgery, Radiology, and Laboratory Medicine (SRLM) building. These three Departments in the Clinical Center are housed in legacy facilities constructed in the 1980s that are both obsolescent and inefficient. Surgeons regularly experience leaks in operating rooms, requiring them to cancel important procedures. The configuration of the operating rooms precludes state-of-the-art hybrid procedures.

In FY 2021, NIH requests a $100.0 million increase to the B&F account, from $200.0 million to $300.0 million. In addition, the Budget includes a general provision that would allow NIH to supplement the B&F account by transferring and merging up to one percent of other NIH appropriations, giving the transferred funds the B&F five-year period of availability. Institute and Center appropriations generally have a one-year period of availability, which is not sufficient for construction projects, and existing NIH transfer authorities do not change the period. Together, the B&F increase and transfer authority would enable NIH to dramatically improve the condition of its facilities and halt the growth of the BMAR.

In addition to construction, another major B&F component is the Repair & Improvement (R&I) program, which enables NIH to maintain and improve the performance of existing facilities throughout their life cycle. As a responsible steward of its 281 facilities, a key aspect of NIH's strategy is to sustain the condition of existing facilities to prevent deterioration and the curtailment of research.

Summary of B&F Funding by Program Activity
(In thousands of dollars)

FY	Construction	Essential Safety and Regulatory Compliance	Physical Security	Repairs and Improvements	Renovations	Equipment/ Systems/ Enabling	Total
2011	-	1,127	-	48,773	-	-	49,900
2012	10,400	16,000	-	98,908	-	-	125,308
2013	7,350	16,250	-	94,509	-	-	118,109
2014	28,630	-	-	100,033	-	-	128,663
2015	78,210	-	-	50,653	-	-	128,863
2016	85,467	-	-	43,396	-	-	128,863
2017	3,200	-	-	125,663	-	-	128,863
2018	7,000	-	-	121,863	-	-	128,863
2019	70,750		-	128,563	-	-	199,313
2020	143,538		-	56,462	-	-	200,000
2021	244,000		-	56,000	-	-	300,000

Programs and Projects

Renovation of Building 10 E-Wing, Bethesda

The renovation of the E-wing in Building 10 is the conversion of 217,285 gross square feet of former patient care and laboratory areas on Floors 2 through 13 to build out laboratory, laboratory support space, and offices for 664 personnel in the clinical research programs of numerous Institutes and Centers (ICs). This project comprises the final phase of a phased master plan to renovate the E and F-wings. The implementation plan is to renovate the E-wing in three separate construction phases consisting of four floors, each starting in 2015 with completion in 2021. This will also include specialty lab programs, including the relocation of laboratories that support the Clinical Center's Department of Transfusion Medicine (DTM) Program and the relocation of DTM's patient and donor apheresis. Additionally, a specialty cell processing current Good Manufacturing Practices (cGMP) facility will be constructed to meet all United States Pharmacopeia (USP) qualifications, as well as additional preconstruction work.

Surgery, Radiology, and Laboratory Medicine Building (SRLM)

The Ambulatory Care Research Facility (ACRF) opened in 1982 and houses the departments of Perioperative Medicine, Interventional Radiology, Radiology & Imaging Sciences and Laboratory Medicine. These departments involve some of the most advanced and technology dependent cutting-edge programs supporting NIH's translational research initiatives. The proposed project is focused on developing a facility that strengthens NIH's biomedical research capacity in close proximity to the Clinical Research Center.

Spatial deficiencies in the ACRF severely impact the Operating rooms, Radiology suite and Clinical Laboratory. Patients and staff lack sufficient support space as they undergo care and conduct treatment protocols. The distribution systems for electrical, duct work and piping are degrading and require replacement, but this cannot be done while the space is occupied. The building's floor to floor heights are deficient, by today's utility requirements, and cannot contain the necessary utility distribution systems. A lack of utility capacity and control results in work environments that suffer from poor temperature and humidity control. These environmental factors can also negatively impact the patient samples that are being processed and tested. Such deficiencies threaten to restrict the Clinical Center's ability to maintain its pre-eminence in conducting the phases of clinical trials essential to translational research and new initiatives.

The NIH Clinical Center is the largest hospital in the world totally dedicated to clinical research and has unparalleled resources and capabilities. NIH Intramural Investigators have discovered many diseases and have characterized the natural history of many more. Due to recent technologic advances, the ability to perform genomic characterization of humans has massively increased, leading to a tidal wave of molecular genetic data. Correlating phenotype and genotype is one of the great challenges of this era as it is a crucial component of two major opportunities in modern biomedicine. The first is the Precision Medicine Initiative (PMI).[1] One of the core approaches to PMI will be to predict the onset of disease, the course of disease, and

[1] http://www.nih.gov/precisionmedicine/.

the response to therapeutic interventions using genomic data. The second major thrust is the molecular taxonomy of disease.[2]

These efforts will reorient our understanding of diseases based on their genetic basis molecular attributes, rather than the current approach of solely relying on phenotype as is largely done today. Both of these efforts seek to capitalize on decades of molecular dissection of pathophysiology to identify new therapeutic opportunities and target them effectively to individual patients. The Clinical Center at the NIH leads the global effort in discovering tomorrow's cures and training today's investigators. It is essential that the Clinical Center has state-of-the-art patient care, treatment and diagnostic facilities that support this effort.

Repairs & Improvements (R&I)

The requested resources will support R&I to the physical plant, building structures, utility systems, roads, and grounds at all the sites in which NIH has an asset interest. These funds will be used to sustain efficient and effective performance of NIH's real property assets to meet ongoing and projected research requirements and to offset the deterioration and obsolescence caused by age and use.

Projects for the R&I program are identified using NIH facilities and program staff recommendations, various facilities studies, and ongoing facilities assessments performed on each building on a three-year cycle by a firm experienced in facility assessment methodology. Once NIH identifies potential B&F projects, they rank the projects using a decision model with input from program officials and subject matter experts to ensure NIH focus is on the most critical projects within available resources. The R&I Board, comprised of senior facilities personnel, makes final project selections. Facilities infrastructure improvements are necessary to meet shifting research priorities and to meet NIH and HHS goals for improving the condition of NIH buildings. Such efforts include upgrading building systems, extending utility infrastructure, and implementing other capital repairs to the buildings and infrastructures to extend their useful life.

This request specifically supports: the continued repair and upgrade of deteriorated infrastructure, including steam and chilled water distribution systems; structural repairs to older buildings that NIH may continue using effectively; upgrading plumbing systems; repairing elevators; upgrading heating, ventilating, and air conditioning systems; replacing deteriorated fan coil units in multiple facilities. This request also supports improvements to address evolving research requirements.

This program supports a comprehensive series of repairs and improvements to ensure compliance with stringent Association for the Assessment and Accreditation of Laboratory Animal Care standards.

The FY 2021 request for B&F is critical to NIH's long-term effort to provide the necessary funding for stewardship of NIH facilities, especially the NIH Clinical Center. NIH would also

[2] http://www.nap.edu/catalog/13284/toward-precision-medicine-building-a-knowledge-network-for-biomedical-research.

utilize the request for R&I projects to address a wide array of basic needs, including patient safety, fire protection, electrical distribution, central utilities, air handling units, exhaust fans, roofs, elevators, building automation, motor control centers, and other BMAR-reducing activities. The requested funds will provide decommissioning, demolition, and related design or construction management services typically associated with R&I projects.

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Budget Authority by Object Class
(Dollars in Thousands)

	OBJECT CLASSES	FY 2020 Enacted	FY 2021 President's Budget	FY 2021 +/- FY 2020
	Personnel Compensation			
11.1	Full-Time Permanent	0	0	0
11.3	Other Than Full-Time Permanent	0	0	0
11.5	Other Personnel Compensation	0	0	0
11.7	Military Personnel	0	0	0
11.8	Special Personnel Services Payments	0	0	0
11.9	**Subtotal Personnel Compensation**	**$0**	**$0**	**$0**
12.1	Civilian Personnel Benefits	0	0	0
12.2	Military Personnel Benefits	0	0	0
13.0	Benefits to Former Personnel	0	0	0
	Subtotal Pay Costs	**$0**	**$0**	**$0**
21.0	Travel & Transportation of Persons	0	0	0
22.0	Transportation of Things	0	0	0
23.1	Rental Payments to GSA	0	0	0
23.2	Rental Payments to Others	0	0	0
23.3	Communications, Utilities & Misc. Charges	0	0	0
24.0	Printing & Reproduction	0	0	0
25.1	Consulting Services	0	0	0
25.2	Other Services	0	0	0
25.3	Purchase of goods and services from government accounts	0	0	0
25.4	Operation & Maintenance of Facilities	0	0	0
25.5	R&D Contracts	0	0	0
25.6	Medical Care	0	0	0
25.7	Operation & Maintenance of Equipment	0	0	0
25.8	Subsistence & Support of Persons	0	0	0
25.0	**Subtotal Other Contractual Services**	**$0**	**$0**	**$0**
26.0	Supplies & Materials	0	0	0
31.0	Equipment	0	0	0
32.0	Land and Structures	200,000	300,000	100,000
33.0	Investments & Loans	0	0	0
41.0	Grants, Subsidies & Contributions	0	0	0
42.0	Insurance Claims & Indemnities	0	0	0
43.0	Interest & Dividends	0	0	0
44.0	Refunds	0	0	0
	Subtotal Non-Pay Costs	**$200,000**	**$300,000**	**$100,000**
	Total Budget Authority by Object Class	**$200,000**	**$300,000**	**$100,000**